

Unit 11

Day 5

Applications of Equations of a Line

⑤ Current transmits = original transmits + annual growth

$$N = 1.8 + .10(1.8)(t)$$

a)  $N = 1.8 + .18t$  (in millions)

c)  $N = 1.8 + .18(2)$

$$N = 1.8 + .36$$

$$N = 2.16$$

2,160,000

2,000,000

d)  $N = 1.8 + .18(5)$

$$2,700,000$$

3,000,000

!

$$\textcircled{3} \text{ a) } V = 23,500 - .06(23,500)(t)$$

$$V = 23,500 - 1410t$$

$$\text{b) } V = 23,500 - 1410(2) \quad \text{c) } 16,450 = 23,500 -$$

$$V = 20,680 \quad \text{1410t}$$

$$\text{d) } 0 = 23,500 - 1410t$$

$$t = 17$$

5 yrs.

30)  $A(-1, 4), B(-2, 1), C(1, 14)$

$$d_{AB} = \sqrt{(-1+2)^2 + (4-1)^2} = \sqrt{1+25} = \sqrt{26} = \sqrt{26}$$

$$BC = \sqrt{(-2-1)^2 + (-1-14)^2} = \sqrt{9+225} = \sqrt{234} = 3\sqrt{26}$$

$$AC = \sqrt{(-1-1)^2 + (4-14)^2} = \sqrt{4+100} = \sqrt{104} = 2\sqrt{26}$$

$$\sqrt{26} + 2\sqrt{26} = 3\sqrt{26}$$

⑧ x-int -1  $(-1, 0)$

|| to y-axis

$$\boxed{X = -1}$$

vert

UD slope

$X = \#$

horiz

$m = 0$

$Y = \#$

⑤  $(2, 3)$  and  $\parallel$  to x-axis  
horiz

$$y = 3$$

⑩

x-int  
 $(2, 0)$

~~$(-6, 0)$~~

y-int  
 $(0, -6)$

$$m = \frac{0 + 6}{2 - 0} = 3$$

$$y = mx + b$$
$$y = 3x - 6$$

$$\textcircled{1} \quad m = -2 \quad x\text{-int } -3 \\ (-3, 0)$$

$$2 = \frac{y - 0}{x + 3}$$

$$2x + 6 = y$$

~~y =~~

$$2x - y = -6$$

$$-3\left(-\frac{2}{3}x + y = 4\right)$$

$$2x - 3y = -12$$



8

1) A piece of antique jewelry is purchased for \$500 and increases in value at a constant rate of 15% per year. Write an equation for value  $J$  after  $t$  years.

2) Suppose that a worker's yearly salary is \$30,000 and that salary increase will be at a rate of 12% per year. Assume that the inflation rate is 8% per year. Write an equation for the real buying power of the salary after  $t$  years.

3) Karl Robbins bought a car for \$23,500. For tax purposes, Karl assumes a depreciation of 6% per year on the car.

a. Write an equation for the value,  $V$ , of the property after  $t$  years.

b. After 2 years, what would the value of the car be?

c. Determine how many years it would take for the car to be worth \$16,450?

d. How long will it take to depreciate the car to \$0. Round your answer to the nearest whole number of years.

HW 3 Wkshts